ATTACHMENT B
PIER Presentation
August 2, 2004, ZENH Workshop

California Energy Commission

PIER Buildings Program

PIER Renewables Program

Staff Workshop #2

Planned Zero Energy New Homes Solicitation

August 2, 2004

Nancy Jenkins, PIER Buildings Program Manager
George Simons, PIER Renewables Program Manager

Follow-up to July 13th Workshop

Three key follow-up issues:

1. Scope of solicitation
   - Includes gas technologies
   - Includes multi-family
2. Funding level
   - $10M to accommodate inclusion of multi-family
   - Proposal budgets are expected to range in size depending on the level of effort, the impact, and the sustainability of the outcomes that will be achieved

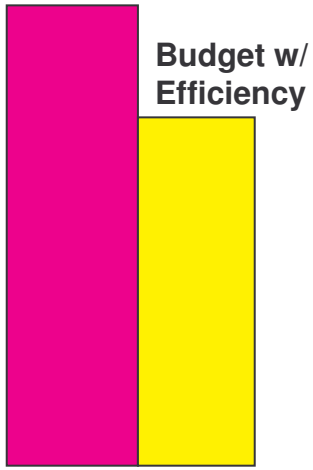
Follow-up to July 13th Workshop

3. Clarification of solicitation goals
   - There will be energy, peak and cost goals
   - Proposals will be evaluated on approach and methodologies proposed to meet goals – not necessarily the absolute quantification of these goals
     - » Likelihood of success in meeting goals
     - » Likelihood of sustainability of approach
     - » Market acceptability
   - Proposals will include monitoring and evaluation to gauge success in meeting goals

RFP Goals

Goal 1: Reduce Energy Use by 25%

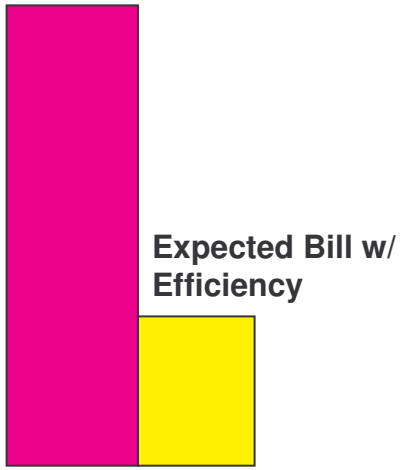
Title-24, 2005 Energy Budget



- No PV
- TDV Method

Goal 2: Reduce Annual Electricity Bills by 70%, Limit Incremental cost to $5,000

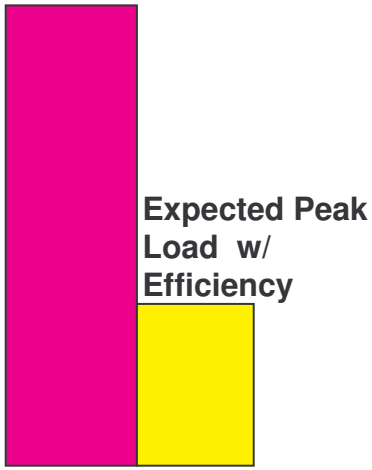
Expected Bill



- TOU Tariff
- Net Metering

Goal 3: Reduce Peak Load Impact to 1 kW Regardless of House Size

Pre-ZENH Peak Load



- House Load Minus PV Output

RFP Goals

Goal 1: Reduce Energy Use by 25%

- The aim is to improve building energy performance by 25% over Title 24
  - Measured against 2005 Title 24 Standards
  - This will require the use of programs that have been upgraded to comply with the 2005 Residential ACM Manual (using the Commission's Time dependent valuation (TDV) approach.)

RFP Goals

Goal 2: Reduce Electricity Bills by 70%, Limit Incremental Cost of a ZENH to the homeowner to $5,000, after rebate

- On an annual basis our goal is a reduction of 70% of electricity bill
  - Based on projected electricity bill, but supported by historical data for utility/climate zone and representative house size
- We anticipate Time of Use Rates and Net Metering to be employed
  - However, will consider innovative strategies intended for implementation by utilities
- Incremental cost of EE/BIPV features not to exceed $5,000
  - Post rebate (i.e., use of rebates allowed to get to $5,000 limit)

RFP Goals

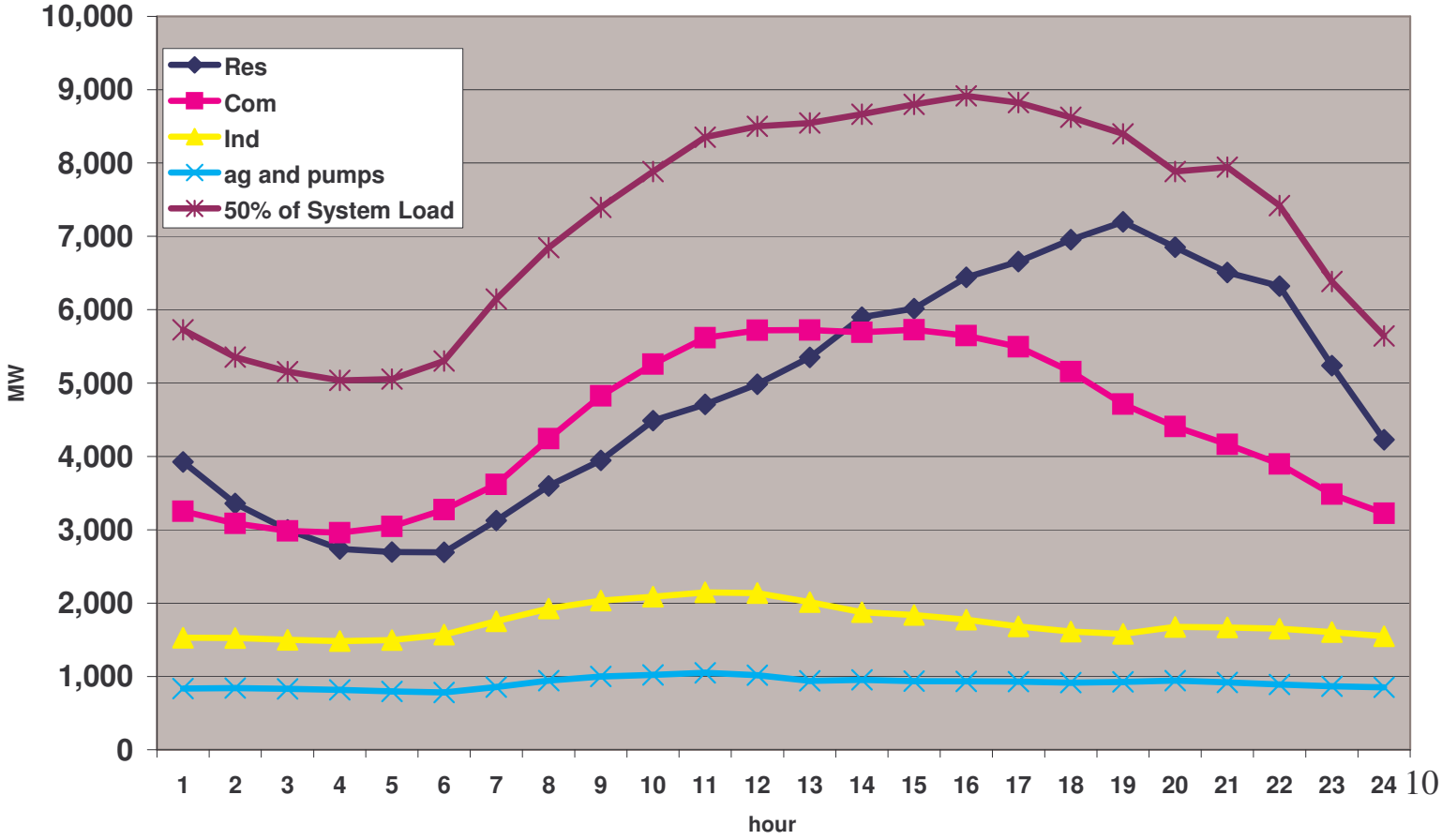
Goal 3: Reduce Peak Load Impact to 1 kW

- Regardless of house size
- Typical new homes draws ~ 4+ kW of load during hot summer afternoons
- By combining improved energy efficiency with limited photovoltaics, we hope to reduce peak system impacts to 1 kW. This is the entire house load served by the utility during the peak
- Although, still under discussion this could be the average impact over the peak period as defined by the local utility or more detailed hourly or 15-minute data

Other Considerations

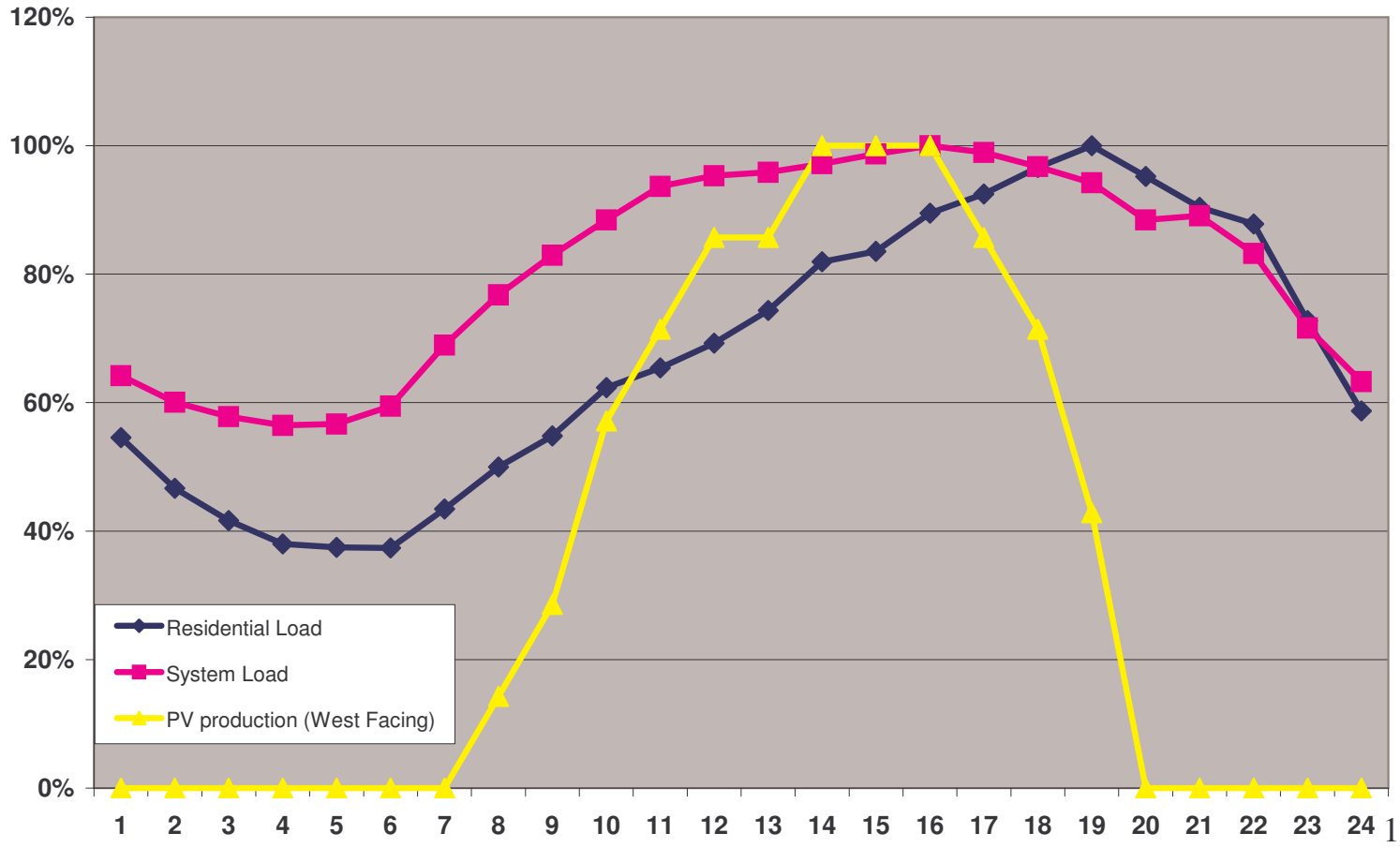
- Utility must agree to install 15 – minute interval meters
  - For monitoring performance
- Tariffs should be at least time-of-use
- Gas bills will be monitored for informational purposes

Example
Utility Loads on June 15, 2000



Example
Residential and System Peak

Normalized System and Residential Loads and PV Production
A Very Hot Day in PG&E



ZENH Solicitation Schedule

Schedule

- Staff Workshop #1 to provide RFP overview and solicit feedback – July 13, 2004
- Staff Workshop #2 to develop PV business models and begin to form partnerships – August 2, 2004
- RFP Release – Approx. 9/1/2004
- Proposals Due – Approx. 11/1/04
- Awards Announced – Approx. 12/16/04